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### Phenolic content and antioxidant activity of virgin coconut oil and other coconut oils

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Virgin coconut oil (VCO) has become a very popular vegetable oil in the world market recently. However, the major method of the extraction of commercial coconut oil (CCO) in the Asian region is by pressing copra. Due to the unaffordably high prices, Sri Lankan consumers are unable to use VCO in their regular diet. Even though several beneficial health properties, including antioxidant activity have been advertised for VCO, scientific data about the beneficial effects of VCO are still insufficient. In the present study, total phenol contents and the antioxidant activity of the phenolic extracts of VCO were compared with those of CCO and traditional coconut oil (TCO), prepared by boiling coconut milk.

Phenolic fractions of coconut oils were separated by the liquid-liquid extraction using methanol/water (80:20 v/v) and the total phenol contents were determined by the Folin- Denis method. Antioxidant activities of the phenolic extracts of coconut oils were determined by measuring the extent of the reduction of potassium ferricyanide by the phenolic extracts.

The highest reported total phenol content for CCO and TCO are  $91 \pm 11$  and  $618 \pm 46$  mg/kg respectively. The total phenol content of VCO was  $78 \pm 1$  mg/kg and the discarded liquid during the cold extraction of VCO contained  $133 \pm 5$  mg/kg of phenolic substances. The results indicate that the lowest total phenol content is present in VCO and a considerable amount of phenolic substances is not incorporated into coconut oil in the preparation of VCO as indicated by high phenol content in the discarded liquid. The reducing powers of the phenolic extracts of VCO, CCO and TCO were  $160 \pm 5\%$ ,  $209 \pm 6\%$ , and  $553 \pm 5\%$  respectively. Even though the antioxidant activity of VCO is highly advertised, the above results indicate that CCO and TCO show better antioxidant properties compared to VCO. Lower phenol contents have also been reported for virgin olive oil compared to other types of olive oils and the antioxidant activity has been shown to depend on the phenol content of olive oil. The above findings indicate similar trends for coconut oil.

Financial assistance provided by NSF under research grant number NSF/RG/2005/AG/03 is gratefully acknowledged.

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